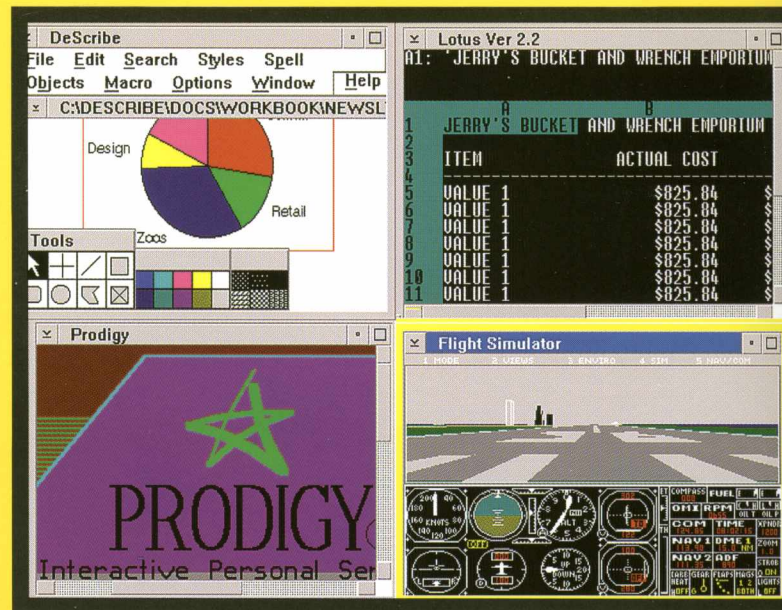


IBM®

OS/2 Breaking through





IBM Operating System/2 2.0

Breaking through

◆ It started as a promise.

It's 1987, and IBM puts personal computing onto an entirely new track —by introducing IBM Operating System/2.®

Prior to that, with DOS, you could only carry out one desktop computing task at a time. If you had several things to do, you simply tried to finish each as fast as possible. There was no other way to increase your productivity.

Similarly, there was a strict limit on how much data you could hold and handle in your computer's memory. If a file or program was too big, you had to work with it in chunks. That meant waiting while one chunk moved back to storage and another moved up. If you wished the process didn't take so long—well, you kept on wishing.

Likewise, before 1987, you basically *hoped* your software would be compatible with something else out there. Otherwise, when your business grew, you'd have trouble integrating and interfacing with other systems. You might even have to scrap your software altogether.

Besides compatibility, you worried about network bottlenecks and slowdowns that compromised your company's efficiency. You worried about data errors that could put a hitch in your operations, system crashes that brought business to a halt.

You had a lot of company. Before 1987, almost everyone was bumping up against computing performance limits, compatibility barriers, reliability problems and a lot of other problems.

Then, in 1987, IBM's first version of OS/2® arrived at the starting block—and promised to change all that.

OS/2 was positioned to take advantage of new hardware technology that delivered bigger, better, faster and more flexible performance. So you'd spend less time waiting and have more ways to increase productivity. Based on IBM Systems Application Architecture® (SAA™), it provided investment protection and an enterprise-wide platform for growth. And OS/2 1.0 held out new potential for increasing network efficiency, data integrity and system reliability.

In the years since 1987, computing has rapidly moved ahead. Steadily evolving, refining and building upon its original promise, OS/2 has set the pace.

Now a new version of OS/2—Version 2.0—takes the lead, and not only realizes the original OS/2 promise but surpasses it.

Bringing exciting breakthroughs in performance, compatibility, reliability, integration, and much more, OS/2 2.0 puts you on the fast track to tomorrow. Assures you of an open field in the future. And runs above and beyond the rest for your business today.



OS/2 2.0 in the workplace:

It's not about reaching limits.
It's about rising above them.

To be truly competitive, you have to raise your computing capabilities to a whole new level. With OS/2 2.0, you're on the mark, ready and set to overcome past limits on how high you go.

◆ **Competitiveness starts with people.
So does OS/2 2.0.**

No one wants to spend half a day tediously trying to get their operating system and computer to function smoothly.

With OS/2, no one has to. Graphically guided installation makes it simple

to get OS/2 2.0 and your computer up and running together without delay.

But fast and easy installation is only the beginning with this friendly operating system. An online tutorial and integrated applets (simple mini-applications) help new users quickly learn the system. An iconic, "drag and drop" interface provides guidance—and facilitates efficiency—in managing files, programs, printers, drives, resources of any type. Contextual Help permits even people with limited experience to do sophisticated computing tasks without losing their way.

◆ **With OS/2 2.0, you've got three ways to run.**

If your business is like many others, you're probably using a number of DOS- or Windows™-based applications.

You can continue using them—right along with OS/2 2.0. To preserve your choices and protect your investment, 2.0 provides DOS, Windows and OS/2 support. You can run most applications based on any of these three platforms—without need for modification. And you can count on consistent, predictable performance when you do.

◆ **Boost productivity to the power of 2.0.**

OS/2 2.0 offers true multitasking to step up productivity. Where other so-called multitasking systems merely enable you to switch among tasks, this one actually allows you to work on several computing jobs concurrently. You can pull up a file, process a transaction, and update a database, for example—all at the same time. Do financial calculations in the foreground while, in the background, several different network communications processes are going on.

You don't have to wait for one job to finish before proceeding to the next. And there's nothing to prevent you from running multiple DOS, Windows and OS/2 applications simultaneously—with a high level of reliability. When you're multitasking, OS/2 2.0 isolates applications from one another and from itself. This enhances system integrity and helps prevent a single application failure from causing widespread problems. If one application suddenly halts, the others can keep right on running. There's no need to stop what you're doing to reboot or reconfigure, because your computer can keep steadily working for you.

◆ **OS/2 2.0 lets you exploit technology that others are only exploring.**

OS/2 2.0 is designed to utilize the power of i386™ SX processors and higher. That means it positions you to take advantage of some of the fastest, most efficient processors in the industry.

These processors can handle 32 bits of information at a pass—compared to the usual 16. OS/2 2.0 matches this power with 32-bit addressability—opening the door to development of new sophisticated applications and enabling simple operations to be completed faster than before.

Besides tapping into state-of-the-art processing technology, you can take advantage of every available bit and byte of high-speed system memory. You can also smoothly support high-capacity storage solutions like fast-access SCSI hard disks, CD-ROM drives and rewritable optical disks. Whether you want to work with or store a mountain of data, you have every opportunity to do so with OS/2 2.0.

◆ **It's more than a way to get out front. It's a way to stay there.**

OS/2 was originally planned around IBM SAA—and the plan still holds. It's an open-ended plan for integration of applications across platforms and environments—desktop to desktop, department to department, headquarters to branch offices, coast to coast.

As the desktop component of SAA, OS/2 2.0 offers the same open-endedness. In fact, it's a key part of IBM's open systems strategy for the future. So you can be sure that, year after year, you'll be able to maintain your lead with OS/2.

OS/2 2.0 and data networks:

Some merely run. Others go beyond.

With OS/2 2.0 as a base, you're ready to reap all the benefits that networking has to offer. IBM Extended Services and OS/2 Local Area Network Server Version 2.0 give you excellent ways to begin:

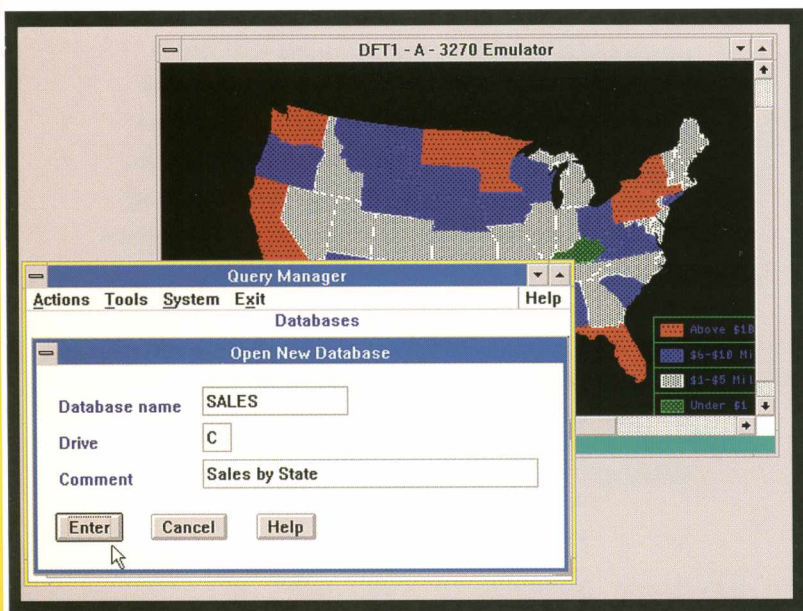
- A choice of two configurations—Extended Services for OS/2 or Extended Services with Database Server for OS/2.
- When you add Extended Services to OS/2 2.0, you get fast and flexible communications, versatile connections and sophisticated database capabilities. Designed to extend the power of OS/2 2.0, it provides a Database Manager that helps you manage information, a Communications Manager that helps you move it with ease.

◆ Extended Services overcomes differences and distances alike.

Extended Services takes a “no-barriers” approach to benefit businesses of any size. It talks the database language of the most powerful IBM hosts, for example. It's equally fluent requesting database information for DOS-, Windows- or OS/2-based desktop applications. And it can support the emulations required to make departmental databases stored on midrange IBM systems available to everyone around.

The Remote Data Services component of Extended Services with Database Server brings even far-removed resources within easy reach—by allowing OS/2, DOS and Windows workstations to interact smoothly with OS/2 database servers attached to their LAN. Users at these workstations don't have to worry about where the information is coming from—or where it's returning to when it's processed. Extended Services keeps all connecting and transporting functions transparent. That means database operations appear to take place at the workstation (no need for extra user training!)—whether the server is several floors away or close at hand.

Complementing Extended Services, IBM SAA Distributed Database Connection Services/2 (DDCS/2) provides similar ease and transparency for workstations accessing remote



IBM hosts. It makes all the right software connections and automatically sends client requests where they need to go. It can allow a single workstation to issue its own local requests—or it can transform a workstation into a request gateway for multiple clients on a LAN.

What all these Extended Services and DDOS/2 capabilities add up to is this: Wherever information is located, there's an easy way to reach it. Wherever it needs to go, there's an easy way to send it. However you want to tie your enterprise together, you can do it. And by widely sharing everything from processing power to data, you can keep your computing expenditures down.

◆ LAN Server and Extended Services: Prepared to maintain the pace.

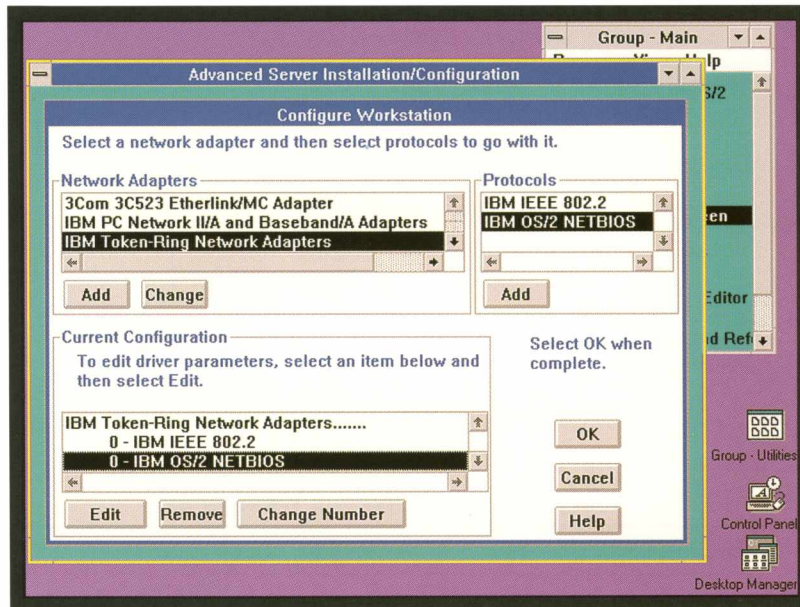
You want to be sure your important business applications will perform reliably on your networks. You need to know that a sudden network shutdown won't cause widespread loss of work in process.

Put your confidence in LAN Server 2.0 and in Extended Services—they're designed to provide unprecedented levels of reliability and availability.

Extended Services offers industrial-strength database protection and recovery solutions. LAN Server protects against disk failure—and permits an orderly shutdown in the event of a power failure. Both these software systems supply error-detection and error-correction features that help you pinpoint and resolve problems without delay.

◆ With LAN Server and Extended Services, the going is smooth—every step of the way.

Both Extended Services and LAN Server come with an array of tools and options for configuring your systems. Some tools help administrators of large networks configure a large number of workstations in a small amount of time. Others help small business owners and end users configure systems themselves. In either case, the configuration options



offer flexibility to fit your specific hardware requirements and networking needs.

Once configured, LAN Server and Extended Services make it easier to get the most from your networks—whether management is handled locally or remotely. Extended Services offers NetView® support, for example—so administrators of large networks can easily command workstations and servers that are located far away. LAN Server enhances management by making all LAN resources appear as a single system—and allowing control of multiple servers from any workstation on the LAN.

IBM Operating System/2 Version 2.0

Feature	Benefit
Application Integration platform	Protects your software investment by supporting most DOS and Windows 2.0 and 3.0 applications "as is"
Preemptive multitasking	- Enables execution of multiple applications at once—including multiple DOS, Windows and 16- and 32-bit OS/2 applications - Increases reliability for high-speed concurrent and background communications
Multithreading	Gives you the capability to complete many processes within a task simultaneously
Application protection	- Enhances system integrity by isolating applications from one another and from OS/2, reducing the likelihood of any one application "hanging" your system - Provides a stable environment for DOS and Windows applications while allowing them to exchange data with each other and with applications based on OS/2
32-bit addressability	- Puts you in position to exploit today's microprocessing technology—i386 SX processors and above - Provides a strong platform for development of advanced applications—especially those involving full-motion video, digital sound, speech and handwriting recognition - Offers a way to double the performance of a variety of low-level functions
Advanced memory technology	- Recognizes and utilizes all available memory - Opens the door to increased use of virtual memory—limited only by available disk space - Manages memory in units of any size
Enhanced file system design	- Makes file systems easily installable - Simplifies support of new storage media (like CD-ROM) requiring specialized functions - Utilizes SCSI hardware performance features - Enables sophisticated caching for reading and writing - Includes support for very large disks, long filenames, and FAT file systems
Object-based user interface	- Offers simple-to-use iconic "drag and drop" capabilities that are consistent across the operating system - Provides a single, easy approach to managing printers, drives, files and programs - Permits management of multiple system resources and applications at a time - Boosts productivity for experienced computer users; reduces training requirements for novices
Built-in applets	Include simple productivity applications, games and utilities that help users learn the system and get to work without delay

IBM Local Area Network Server Version 2.0

Feature	Benefit
Entry and Advanced configurations	Let you choose LAN server software that best fits your needs and hardware requirements
i386 High-Performance File System (Advanced configuration)	- Boosts overall system performance - Enhances security
Disk fault tolerance (Advanced configuration)	- Supports disk duplexing and disk mirroring - Allows detection and correction of disk errors
Single-system image	- Gives you easy access to local and remote information from workstations via menus - Simplifies operation by making the client/server architecture appear as one integrated system
OS/2 LAN Requester	Provides support for OS/2 SE 1.3 and OS/2 2.0 workstations
LAN transport	- Gives you connectivity for OS/2-based workstations - Supports Network Device Interface Specification (NDIS)
DOS LAN Requester and LAN Support Program	- Give you connectivity for DOS systems and compatibility with Windows 3.0 - Work over Ethernet as well as IBM Token-Ring and PC Networks
Support for up to four adapters	Provides access to the same server from up to four different LANs
Remote Initial Program Load (RIPL)	- Allows you to download software from the server to diskless workstations - Supports DOS and OS/2 workstations on Token-Ring, Ethernet and PC Networks
Uninterruptable Power Supply (UPS) support	- Allows battery backup to keep the server running for a brief period of time in the event of a power failure - Permits an orderly shutdown of your system following a power failure
Migration facilities	- Provide a smooth upgrade to LAN Server 2.0 - Allow you to import all the necessary data from your earlier server programs
User Profile Management (UPM)	Offers a graphical interface for administration of user and group IDs
Printer management	- Supports multiple printers concurrently and prioritizes print requests - Provides automatic job routing to the first available printer associated with the queue
LAN resource administration	Allows you to control multiple servers as well as all facets of resource sharing from any OS/2 workstation
Net Run	- Helps minimize data traffic across the network - Improves efficiency by executing server backup operations, document formatting, database indexing and program compilations
File replication service	Provides a fast, powerful means of backing up critical resources

IBM Extended Services

	Feature	Benefit
Communications Manager	Integrated terminal emulation capabilities	• Give you flexibility to support a variety of IBM and non-IBM host-connected applications on a single workstation
	Network Device Interface Specification (NDIS) support	• Means you can pick and choose among communications adapters from a wide variety of vendors
	Programming interfaces	• Facilitate resource-sharing, distributed processing, peer-to-peer interactions, and application migration among a wide variety of systems and platforms • Include: Advanced Program-to-Program Communications (APPC), Common Programming Interface for Communications (CPI/C), Advanced Peer-to-Peer Network (APPN) support, Emulator High Level Language Application Programming Interface (EHLAPI), Server-Requester Programming Interface (SRPI), X.25 protocols, Asynchronous Communications Device Interface (ACDI), IEEE 802.3 and IBM NETBIOS LAN programming interfaces, Logical Unit Application (LUA) interfaces
	3174 Peer Communications support	• Introduces LAN capabilities into the coaxial-wired environment—without requiring installation of LAN cabling
	5250 Workstation Feature (5250 WSF)	• When doing 5250 emulation, permits you to run as many as five AS/400® or System/36 terminal or printer sessions at once
	SNA LAN gateway support	• Allows a workstation to function as a gateway providing host access for up to 254 other workstations on an IBM Token-Ring, PC Network, ETHERAND LAN, SDLC switched link, or X.25 network • Makes it possible to bring host resources to many users while keeping modem and line costs down
	Subsystem Management Interface	• Helps system administrators control and obtain status information on the SNA communications resources being maintained by Communications Manager
	System/370™ NetView® support	• Includes an S/370 NetView Remote Operations Facility and Router • Facilitates management of databases and servers that are located far from the central host
Database Manager	Relational Database SAA Structured Query Language (SQL) support	• Assures SAA SQL compatibility with the high-level data definition and data manipulation language of IBM host database management systems, such as Structured Query Language/Data System (SQL/DS™) and DATABASE 2™ (DB2®)
	SQL Command Interface	• Allows users to issue SQL statements, database environmental commands and utilities directly from the OS/2 command line
	Query Manager	• Lets users access, update and administer data—with no need to learn SQL syntax • Provides a user-friendly Presentation Manager™ interface for query, report, data entry/edit, and table creation
	SQL Query Management Facility (SQLQMF)	• Downloads, imports and converts data from DB2 and SQL/DS host databases for use in Database Manager tables
	Database Services	• Include SQL-based utilities and functions for data access, management, integrity and protection • Also support concurrency control, data import/export, referential integrity and grant/revoke privileges
	Remote Data Services (Database Server configuration)	• Give OS/2, DOS and DOS Windows client applications access to remote OS/2 database servers attached to a LAN • Make it seem to the user as if the database were local • Support remote client/server interactions in a variety of environments
	DOS Database Requester	• Lets DOS and DOS Windows applications access OS/2 Database Manager databases
	Database administration tools	• Offer graphical interfaces for managing databases and directories • Include tools for configuring, backing up and restoring a database • Now supply "industrial-strength" data protection and integrity solutions, including forward recovery and First Failure Support Technology/2 (FFST/2)

It started as a
promise.

And led to a
breakthrough.

As a platform for integration, OS/2 2.0 simply has no peer in the industry. In the race to exploit hardware technology, this system wins every heat. And when it comes to reliability and availability, a more enduring champion can't be found.

To summarize: OS/2 2.0 breaks through for business on just about every front. And there will be even bigger breakthroughs with OS/2 2.0 up ahead. That's because this system's 32-bit addressability creates an entirely new course for independent software developers across the country. And IBM intends to provide a comprehensive set of development tools to speed their work of building new applications that capitalize on the power of OS/2 2.0.

To learn more about OS/2 2.0—and how it can benefit your business—contact your IBM Authorized Remarketer or IBM marketing representative.





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